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# INNOVATIVE USE OF INFORMATION TECHNOLOGY IN FACILITATING PUBLIC ACCESS TO AGENCY DECISIONMAKING: AN ASSESSMENT OF THE EXPERIENCE IN STATE AND LOCAL GOVERNMENTS

FINAL REPORT

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# INNOVATIVE USE OF INFORMATION TECHNOLOGY IN FACILITATING PUBLIC ACCESS TO AGENCY DECISIONMAKING: AN ASSESSMENT OF THE EXPERIENCE IN STATE AND LOCAL GOVERNMENTS

## INTRODUCTION

The use of information technology has been promoted as a means of facilitating public access to government agency decisionmaking since at least the sixties. As new technological advances have occurred, promoters and government reformers alike have sought to apply the technology in new and innovative ways. Some such experiments of interest to the federal government have occurred at the state and local government level. This report presents an assessment of information technology applied to public access to agency decisionmaking in state and local agencies, and comments on the applicability of these experiences to the federal government. [1]

The report contains four sections. In Part I we discuss the methods and data collection procedures used to prepare this report. In Part II we present the conceptual framework for the study. In Part III we present findings from the brief sample survey of state and local agencies we conducted, as well as data from case studies dealing with use of information technology in providing public access to local government data. In Part IV we evaluate the consistency of these findings and comment on their relevance for federal government considerations.

# I. METHODS AND DATA

In accordance with the detailed outline and research plan for this study, we conducted four major tasks. Specifically, we: (1) developed a conceptual framework for collecting data, (2) identified state and local agencies making innovative use of information technology to provide public access to government decisionmaking, (3) conducted more detailed studies of selected systems, and (4) compared and summarized our findings.

## Conceptual Framework for the Study

We developed a conceptual framework for describing and analyzing innovative state and local government use of information technology in facilitating public access to agency decisionmaking. We completed this task through review, comparison, and assessment of frameworks for describing and analyzing the use of information technology in government and in organizations more generally. That assessment led to the framework described and explained in Section II of this report.

## Identification of Innovative Governments

We identified state and local governments that are innovators in the use of information technology in facilitating public access to agency decisionmaking. We completed this task through several methods. First, we conducted library and computer searches of the public affairs literature for articles, magazine and newspaper accounts of innovative use of information technology to facilitate public access to agency decisionmaking. These searches produced many accounts of innovations that were about to happen and accounts of how good these innovations were going to be, but they provided few solid leads to places with genuine experiences with innovations. Despite their shortcomings, these searches led to a list of candidate state and local governments for further study.

Second, we contacted by telephone officials at the National Association for State Information Systems (NASIS), the National League of Cities, the U.S. Conference of Mayors, the International City Management Association, the National Association of Counties, and Public Technology, Incorporated regarding their knowledge of state and local government innovators in this area. The purpose was to confirm the candidate governments discovered in our literature and computer

searches and, possibly, to discover new candidates. Generally, these telephone discussions confirmed what we found in the literature.

Third, we enlisted Carl Vorlander, Executive Director of NASIS, to issue a call for assistance to all NASIS members both at the December Executive Committee Meeting in Florida and through NASIS's Bi-Monthly Bulletin for November/December. The time frame of this project did not permit a similar call for assistance among local governments. However, we did review several comprehensive surveys conducted by ourselves and others related to the use of information technologies for these purposes in local governments. We also searched the PIN (Productivity Information Network is a computerized network of ICMA and McGraw-Hill) and LOGIN (Local Government Information Network is a similar network run by Control Data Corporation in cooperation with PTI, URISA and other local government organizations) files.

Fourth, while constrained by budget and available time, we conducted a telephone survey in five states of existing and planned systems which in some way provide for public access to information related to public decisionmaking. The states were selected so as to overlap with some of the other states being investigated by concurrent OTA studies on public access. We also tried to provide some geographic spread as well as a spread on the level of activity and sophistication of systems. The result of this site selection process yielded the states of: California, Oregon, Michigan, Virginia, and Florida. We then decided to limit our investigations of local government uses of information technology to city and county governments in these same states so long as we had adequate coverage of the innovative uses of information technology. In general, this strategy worked.

Study of Selected Systems

We studied state and local government uses of information technology in facilitating public access to agency decisionmaking by conducting telephone interviews with individuals in the relevant state and local governments and reviewing the literature describing innovations in the candidate governments. In the case of local governments, our evaluations were additionally aided by site visits and extensive interviews conducted during 1984. Based upon these site visits, interviews and literatures, and as described in Section III below, we wrote short case descriptions of the uses and impacts of information technology found in our investigations.

Comparison and Summary of Findings

Finally, we did a double cross-comparison of our findings from the case studies. We first compared the findings across the states and across the local governments and, then, across both the states and the local governments. We found remarkable consistency in findings in both of these cross-comparisons. This report presents our summary of the findings. [2]

## II. CONCEPTUAL FRAMEWORK

Our data collection efforts were guided by a conceptual framework for describing and analyzing innovative state and local government use of information technology in facilitating public access to agency decisionmaking.

General Concept for the Study

One of the basic tenets of representative democracy is that there should be public access to governmental decision processes. Throughout American history, various political and administrative mechanisms have been introduced in the quest for public access. In the latter half of this century, the quest has centered primarily on administrative agencies because these agencies have grown dramatically in size, function and authority. Also, as noted by Kaufman (1971:554), while "chief executives, legislatures and courts make more decisions of sweeping effect, the agencies make a far greater number of decisions affecting individual citizens in intimate ways."

Among the mechanisms introduced have been: situating spokesmen for the interests affected in strategic positions such as advisory boards and commissions within the agencies; centralized governmental complaint bureaus such as the office of ombudsman; and administrative decentralization through community action boards, little city halls, neighborhood councils and community associations.

More recently, the advent of information technology has seemed to offer new ways of increasing public access. In fact, each new information technology ranging from computers to telecommunications to decision science has seemed to offer a new and different hope. In order to systematically examine the role of these technologies, we needed a model of ways in which the technology might potentially increase public access so that we could examine its past, present and likely future use and effects.

Our analysis was oriented around a systems model of decisionmaking which distinguishes between inputs, process and outputs (see, for example, the classic analysis by Easton, 1975, or the more recent analysis by Sabatier and Mazmanian, 1980). The potential role of information technology in facilitating public access was defined in relation to these three elements. Thus, information technology could potentially increase: (1) public inputs to, (2) knowledge/participation in the processes of, and (3) influence on the outcomes of legislative and executive agency decisionmaking. Information, communication, and participation can all be regarded as hallmarks of greater public access. Specifically, information technology potentially could:

1. *Provide "information"* about decision inputs, processes and outputs and thereby facilitate public access. Illustrations of such use include: governmental and public affairs programming (e.g., broadcast of public notices, public information) accessed via one- and two-way uses of television; public meetings and administrative hearings accessed via video, audio and computer conferencing; and government databanks accessed via computer, teletext and videotex communication.

2. *Facilitate "communication"* among people with similar interests in decision processes and thereby assist political organization and mobilization that leads to greater public access. The key illustrations of such use are electronic mail and electronic bulletin boards via computer networks.

3. *Facilitate "participation"* and thereby facilitate public access. The key illustration of such use is electronic conferencing and voting via computer and cable television networks.

As these illustrations suggest, there are two broad senses in which information technology might be used to increase public access. The first is use of information technology as the means of facilitating public access directly. The following above-mentioned uses of information technology might be expected to increase public access directly:

1. Governmental and public affairs programming via cable television

2. Public meetings and administrative hearings accessed via video, audio and computer conferencing

3. Government databanks accessed via computer,

teletext and videotex communication

4. Electronic voting via computer and cable networks

5. Electronic mail and bulletin access boards via computer networks

The second sense in which information technology might be used to increase public access is more subtle. Because the activities of public agencies are increasingly tied to use of information technology, access to the processes can become increasingly complex and confusing for the ordinary citizen. Thus, access to decisionmaking is inherently more difficult. But, if suitable applications of the technology are developed, public access can be greatly facilitated by making decision processes more transparent to the public, and electronic information technology might help in this. Examples would include: making available to the public the "models" (mathematical formulas, computer programs, detailed substantive logic), underlying the taxation of property and income, the allocation of transfer payments, etc.; making available the data used in these models; making available the computing or other resources required to access and use the data and the models to replicate, game, and otherwise understand agency decisionmaking.

## Definitions of Terms

### Information Technology

We define information technology broadly to include computers, telecommunications (broadcast TV, CATV, satellite TV, computer networks, teleconferencing) and decision science techniques (computer models, individual and group decision aids). More narrowly, however, we restricted our definition of technology to include a specific set of physical systems that might be used to provide public access to decisionmaking. These are:

1. Computer Systems: Digital computers accessible through on-site or remote terminals. These computers can be put to various uses, including record storage and dissemination, modeling and analysis, and computer conferencing. The effect of public access to government computing systems depends on what the computers are used for.

2. CATV Systems: Cable television to provide viewers with real-time or delayed broadcast of meetings, hearings, and so on. Also, television can be used in two-way communications to allow individuals not at the meeting site to record their opinions.

3. Teleconferencing Systems: Electronic conferencing can take place via two-way audio links (audio conferencing), two-way video links (video econferencing) and interactive computer (computer conferencing). Both audio and video conferencing are real-time modes in that the participants have to participate at the same time. Computer conferencing can be asynchronous, in which participants communicate by written text whenever they have a chance to get to a terminal.

4. Electronic Voting Systems: Electronic voting utilizes communications technology to allow people to vote remotely via terminals connected to a computer. Electronic voting can take place within a meeting room, or among a larger community of participants spread over a large number of electronically connected sites.

Public Access

There is no consistent definition of the term "public" to be applied here. Rather, there are several different categories of public actors who periodically need or desire access to public agency decisionmaking. We adopted the following list:

1. Citizens not formally affiliated with any organized special interest group. This would include the average person who is interested in some decision activity, either on a one-shot basis or as part of personal interest in government decisionmaking.

2. Organized interest groups, with a stake in outcomes of government decisionmaking. This would include all non-profit and for-profit lobbying groups, trade associations, professional associations, chambers of commerce, and issue-specific groups (e.g. the Sierra Club). It would include both temporary interest groups as well as these relatively more permanent ones.

3. Private companies that have a stake in outcomes of government decisionmaking, but that work on their own and not as a part of an organized group. This would include companies that might want some legislative action that affects their interests directly or indirectly. Such decision situations might affect larger interest groups, but the company requesting or monitoring action is not specifically interested in the larger picture.

In principle, it is likely that the governmental systems that do exist to provide information, or otherwise facilitate public access, provide it to anyone who asks on a non-discriminatory basis. That is, an individual citizen has the same access as a State or local area Chamber of Commerce; no more and no less. In reality, however, there might be significant differences among and between individuals and organized groups. These differences stem from relative differences in resources, location, and bureaucratic competence. For example, if there are fees charged for use of a public information service, organized groups might be more willing and able to pay than individuals. [3]

On the other hand, it is likely that systems installed for providing information, or otherwise facilitating public access, are initiated and installed to meet the needs of particular organized groups rather than individual citizens or companies. Thus, systems might come into being as a result of pressures from organized groups, but become available to everyone once installed. It is important, therefore, to distinguish between why a system was installed and who actually uses it as compared to who may use it. Expensive systems probably ought to serve specific needs that are defensible in terms of meeting the requirements of specific interest groups; but the simple fact that others can also use the systems might not be taken as a good in itself especially when others do not use them in reality.

## Kinds of Information Provision

There are also different kinds of information provision that state and local governments can facilitate related to government decisionmaking. We identify four such kinds of information:

1. Protocols and Processes: Provision of

information related to the protocols and processes of public decisionmaking. This includes information about meeting dates of public hearings, committee meetings, decision deadlines, meeting agendas, protocols for public notification, and protocols for public participation in decisionmaking (e.g., signing-up to testify before a hearing).

2. Facts and Analyses: Provision of information on the factual bases and formal models used in support of decisionmaking. This includes access to the data bases used to evaluate decision options, and where they exist, access to and even use of the computer-based models that are run to provide information related to the decision.

3. Meeting Records: Provision of information related to the actual conduct of decisionmaking meetings. This includes broadcast of real-time or delayed video or audio records of actual meetings.

4. Records of Decisions: Provision of public record information related to the outcomes of public decisions. This includes automated indexes of questions coming before public decisionmaking bodies, the deliberations on them, and the outcomes of the decisionmaking process. Examples would be automated indices of issues that have come before a state legislature and their resultant dispositions.

It is important to distinguish between these different kinds of information provision because each embodies different components of decisionmaking activities that have, in turn, different potential for being assisted by electronic information technologies. All of these components are now accessible to the public through various mechanisms, established over time to provide the public opportunities to engage in decisionmaking processes. The schedules of hearings, meetings, and so on are available from public decisionmaking bodies through published agendas and by direct access (e.g., telephone calls, walk-in service, or CATV bulletin boards). Most public decision meetings are open to the public. The results of meetings and the decisions made in them are matters of public record, and are generally published in the form of minutes or transcripts.

The only decision component where there is considerable variance in accessibility by the public to information

is in facts and analyses that support decisions. In some cases the public is excluded as a matter of policy, such as in determinations about who's taxes will be audited. In other cases access is simply more difficult to provide since most fact gathering and analysis is conducted by staff people over a period of time preceding meetings, and not in meetings themselves. Involving the public in fact gathering and analysis is simply impractical in most such situations.

Our overall objective is to determine where electronic information technologies are being applied to provide access by various publics to these components of the decisionmaking activities of government. However, we know from our previous research that few state and local governments are engaged in use of modern technologies for these purposes. Since our sample was necessarily restricted by time and budget, and we did not anticipate substantial examples of such uses, we expedited data collection by simply surveying the uses made of electronic information technologies related to public decisionmaking generally. In the relatively few cases where we found examples worth noting, we explored them to determine which publics are affected and what components of decisionmaking are targeted by these uses. The framework below was used for data collection in the agencies surveyed.

## Data Collection Framework

The framework in Table 1 contains the variables on which we collected data on each of the sites studied. For each of the technologies listed down the left column, we collected data for the following variables:

IN USE?
: Is this technology being used for executive and/or legislative agencies for public access to or use of government information related to public decisionmaking? If the answer is no, complete only the PLANNED column.

YEAR BEGUN
: What year did they start using the system(s). Itemize each system, and year begun.

PLANNED
: If they are not using the technology now, do they plan to begin using it in the near future -- if so, when?

EXEC/LEGIS
What executive and/or legislative agencies are using the technology?

USED FOR
Describe the system and what it is used for.

USED BY

What kind of public users use this system?

IMPACT
Describe for each of the technologies the impact its use has had. In particular, we are interested in:

1. Are the expectations around which the systems were installed being met?

2. What kinds of changes have resulted from using the systems, particularly with respect to the way things were done before the systems were installed?

3. What kinds of costs have been incurred, and does it seem as though the costs are worth the benefits being received?

TABLE 1

FRAMEWORK FOR ANALYSIS

SITE:

CONTACT PERSON(S)

NAME(S)

TITLE/AFFILIATION:

DATE(S) OF CONTACT(S):

| TECHNOLOGY | IN USE? (Y/N) | YEAR BEGUN | PLANNED (Y/N) | EXEC/ LEGIS | USED FOR | USED BY | IMPACT |
|---|---|---|---|---|---|---|---|
| COMP. SYST. | | | | | | | |
| CATV: | | | | | | | |
| 1-WAY | | | | | | | |
| 2-WAY | | | | | | | |
| CONF: | | | | | | | |
| AUDIO | | | | | | | |
| VIDEO | | | | | | | |
| COMP. | | | | | | | |
| E-VOTE | | | | | | | |

# III. FINDINGS

Our review of applications and practices in state and local agencies revealed that, while there is a wide variety of planned and developing programs intended to enhance public access to government decisionmaking and intensive study of the issue going on in many governments, there are few programs actually providing such access on any scale at this point in time. We present below a summary of our findings in selected states and in selected local governments.

## Public Access Systems in Selected States

State use of systems which provide for public access to agency decisionmaking varies widely among states and within various branches of state governments. The range of public access to publicly held data bases ranges from no access whatsoever to plans being laid by a state to build and maintain a state data center which would house and service all requests for publicly accessible data files. While constrained by budget and available time, we conducted a survey in five states of existing and planned systems which in some way provide for public access agency decisionmaking, usually access to public information. The states were selected so as to overlap with some of the other states being investigated by concurrent OTA studies on public access. We also tried to provide some geographic spread as well as a spread on the level of activity and sophistication of systems. The result of this site selection process yielded the states of California, Oregon, Michigan, Virginia, and Florida. We also include information on a public access system developed in the State of North Carolina.

Information on specific public access systems in use and planned in the five selected states is provided below. Note that in each case we refer only to systems used to provide public access to decisionmaking. We did not cover systems for internal government use. Appendix A provides a list contacts and documents acquired from the various states which were used to develop these findings.

### California

Computer systems: The Legislature has its own bill monitoring system as does the Department of Finance and several other agencies, however, none of these systems is publicly accessible. The Secretary of State provides for terminal access to data flow counts of election returns mainly for press use. Data can be

provided by tally or formatted by district or issue. Private citizens can have access and are provided use of a terminal if they come to the location of the system.

CATV (1-way, 2-way): The State of California has made a conscious decision not to develop CATV for state systems at this time. The state conducted a study of the potential use of such a system, the actual cost savings, and the extent to which physical meeting time could be replaced by CATV. The problems and constraints involved location of and access to a room or rooms equipped for CATV, the estimated $100,000 to $200,000 cost to construct and operate a CATV location, and the fact that their study showed almost all of the meetings involved interactions which required participants to physically get together for the meeting.

Conferencing: One-way, real-time audio monitoring of legislative proceedings is conducted mainly for executive branch monitoring of legislative hearings. There is currently no video monitoring done in the State government

Voting: The California Legislature uses an electronic voting system.

Michigan

Computer Systems: The State of Michigan has two systems which are being developed to provide public electronic access to information in the Michigan Legislature. The first is a system called BROWSE. This is a bill monitoring system which was initiated in January, 1985 and which is expected to take eighteen months to complete. Public use and access is planned via modem. Primary users are expected to be lobbyists, legislative staffs, and public interest groups. Michigan also maintains an automated compilation of all laws but on-line access is currently restricted to one or two law libraries in the state. Once the BROWSE system is up and running there may be further developments to allow more public access to the automated listing of all compiled laws, however there are no specific schedules for this development.

CATV (1-way, 2-way): Neither the Michigan Legislature or Executive Branch use 1-way or 2-way CATV technologies in the conduct of their daily business.

Conferencing: Audio or video conferencing is not currently in use in either the Michigan State Legislature or Executive Branch.

Voting: Currently the Michigan State Legislature does have electronic voting capability, however, there is no data processing support for this system.

Note on Public Access via Private Firms: The State of Michigan has two firms which are instrumentally involved in monitoring and reporting on the activities of the State Legislature. The first is Public Sector Consultants, Inc. located in Lansing Michigan. This firm provides a Bill Analysis Service which tracks activity of each bill in the Legislature by topic, by bill number, and by sponsor (either House or Senate). Subscribers to the service may obtain their information from the Service via electronic media called "Info Plus" or by hard copy. Information is input to the system from the Daily Status Report which is published by the Legislative Service Bureau. The service is sold by the legislative session which is two years long and subscribers receive a newsletter along with the specific information on their bill. The system was initiated in the area of health in September 1983 and grew to include banking and finance in March of 1984 and finally local government issues were added in June of 1984. Michigan law provides for public access to legislative records in paper or tape medium. However, there is question as to whether or not floppy disks (on which the Legislative Service Bureau keeps many of its records) are covered under this law.

The second firm involved in public access in Michigan is called Nichigan Information and Research Services (MIRS). Employees of this firm attend all legislative meetings and sessions and record the proceedings. They also obtain the text of all bills. They then publish a daily status and make this information accessible electronically to their subscribers via Info Plus which is the electronic media distributor mentioned above (part of Public Sector Consultants). Several observers contacted have indicated that the MIRS reports are often more timely and accurate than the Legislature's own records.

Florida

Computer Systems: Although direct access to automated databases was provided previously. Access has been temporarily suspended until court settlement on access to software issues. For non-on-line access, The State will provide the data in any form requested (paper,

tape, disk etc.) no custom programming is carried out for the public.

In Florida six state agencies, each of which are responsible for some aspect of land use planning and the policies for growth management, are planning to develop an integrated computer system using networks. The goal is to develop a locus of information for data from all six agencies so that a consolidated, comprehensive position on land use planning and growth management can occur. Public access to this network is an important element in the development process. There is no indication as to when this system will be developed. The two primary factors holding up implementation are cost and the software litigation mentioned above.

Florida is entertaining a proposal to use community colleges as a public access point for State systems. This would be developed using as a model the Florida Information Resources Network which is now in place in Florida's educational system. The goal is to tie several regional data centers together using the technology of this system.

CATV (1-way, 2-way): Legislative hearings are televised by the Public Broadcasting System in abbreviated form each evening after the sessions are over. The show is called "Today in the Legislature" and runs for approximately two months. The Florida State government does not employ two-way CATV.

Conferencing: Audio conferencing is in use and was started in 1979. It is used primarily by the executive branch. Most frequent use is for Disability Claims Determination Hearings of which the State does 5,000 to 10,000 per year. The Department of Transportation uses audio conferencing for district manager meetings. While these meetings are not closed to the public, there is seldom any interest on the part of the public in accessing these meetings. Also in use in the judicial branch is audio pretrial motion hearings which gets rave reviews from judges and lawyers.

No video conferencing is employed by either the Legislative or Exrcutive branch of the Florida State government.

Voting: The Florida State Legislature does not employ electronic voting in either the House or the Senate.

Virginia

Computer Systems: Virginia maintains a Bill Status System wherein the location and movement of measures being considered by various Legislative Committees are monitored and put onto a computer system. This system is accessible to all and provides the kind of information required by interested groups to guide the timing, location and individuals they need to contact to affect public decisions. Access is provided on-line and costs are reimbursed mainly through a subscription service charge.

Virginia also maintains a code search system which is open to state agencies only at the present time, however, there are plans to open this system to the public in the future.

A unique aspect of the Virginia system is that all agencies in the state share a common data center. Access to the systems in the data center are not as restricted as one might think. With proper security clearances, demonstrated technical ability and a need to know, most of the data in the Virginia state data center are open to the public for inspection and copying.

CATV (1-way, 2-way): The State of Virginia does not employ CATV in its legislative hearings or administrative operations.

Conferencing: Audio - Teleconferencing done within the state legislature. There is audio monitoring of the sessions by staff who use this information to input to the Bill Status System. Video - Educational Television Network broadcasts Legislative hearings for two hours each evening during which the legislature is in session.

Voting: Electoral voting in Virginia is still manual. The Legislature uses electronic voting in lieu of roll call methods, however.

Oregon

Computer Systems: There is no direct on-line access to data held in state computer systems, however, a copy of any public record may be obtained at cost in whatever medium is required.

Oregon does maintain three systems currently and will be adding another in the next year which facilitate

legal research and the public's access to laws, rules and precedent setting decisions. These automated systems include: Oregon State Laws; Oregon State Administrative Rules; and Attorney General Opinions, all of which were started in 1977. A system planned for 1986 is an historical database on Appelate Court decisions. These systems are made available on-line to the general public on a direct cost recovery basis.

Like Virginia, Oregon operates a Measure Tracking System which maintains status of bills during the various legislative proceedings by topic and by bill number. An important public access component of this system is the built in scheduling system which informs an enquirer when and where public testimony is being accepted as a bill moves through the legislature. This is a critically important function to public participation because in Oregon, actions are taken mainly in committee. Access is available by modem or directly through paper or tape medium.

CATV: The Oregon Legislature has an in-house, one-way CATV system but does not provide public access to this system. Use of this system is mainly by the Executive branch where administrators monitor activity on the floor of the Senate and the House. There is no two-way CATV in use or planned in Oregon.

Conferencing: Currently the State does not use audio or video conferencing. Video conferencing capabilities are planned to be created during the 1985-87 session.

Voting: Electoral voting is manual in Oregon. Voting in the House of Representatives is, however, done electronically. The Oregon Senate, however, has and will continue to vote by roll call.

## North Carolina

North Carolina was not selected as a survey state. However, there exists in that state a system called "OPEN/Net" (Open Public Events Network) administered by the North Carolina Agency for Public Telecommunications which warrants attention in this report. This system is a prime example of one-way cable television used to provide citizen access to activities and information related to the conduct and decision-making of the North Carolina State Legislature. The program also provides a forum for public interaction with legislative officials over the telephone which are also broadcast. OPEN/Net is a cable television network delivered by satellite to about seventy cable television systems

throughout the state of North Carolina, plus ten cable systems in Michigan and two in Virginia.

The service currently operates on Friday nights from eight to ten p.m. Each week's program begins with an hour-long unedited videotaped portion of a state government meeting, hearing, conference or event. Immediately following the videotaped coverage, leaders and officials from that meeting appear live in the OPEN/Net studio to field questions and comments by telephone from the viewing audience. The service has been underway since March 1984.

Reports of the program's impact indicate that it has grown tremendously in terms of popularity and citizen participation. Despite the fact that the programs have covered North Carolina state government activities only, officials in Michigan, Virginia, and other states have expressed interest in developing their own OPEN/Net programs. In November 1984 Michigan's Commissioner of Economic Security appeared live in the Raleigh OPEN/Net studio with the Chairman of North Carolina's Employment Security commission following a program on the changing nature of the job market. Viewers called in from North Carolina and Michigan, as well as other states, to ask questions and have access to the state officials.

OPEN/Net program topics are chosen by an independent committee of North Carolina citizens. Topics during the past year have included education reform, the laws, children's mental health, women in business, persons with disabilities, and many others. There is an OPEN/Net legislative branch liaison and an executive branch liaison. Given the satellite technology used, there exists the possibility of pre-empting regularly scheduled programming to cover emergemcy issues or to act as a giant referral service for the state. OPEN/Net officials report outstanding participation from government officials, cable TV companies, broadcasters, private funding sources, and the general public.

## Recent Developments in State Computer Information Access Policy

In the process of conducting the five state survey of public access to information used for agency decisionmaking, we found that both the state of Florida amd the state of California had embarked on studies of this issue. The Florida study, entitled "Remote Computer Access to Public Records in Florida" was carried out by the Joint Committee on Information Technology Resources of the Florida

Legislature. The California study is entitled "Framework to Develop Computer Information Public Access Policy" and was prepared by Touche Ross & Company and EDP Audit Controls, Inc. The findings of both of these studies are useful to the development of a more complete understanding of the issue of public access. Brief summaries of the findings and recommendations of these studies are presented below.

Florida

The issue of providing remote computer access to public records came before the Florida Legislature during the 1984 session. Several bills were introduced that would have amended Chapter 119, Florida Statutes, to authorize special computer access to public records. The Joint Committee on Information Technology Resources was asked to prepare an analysis of the computer access issue in order to determine how information technology was impacting on access to public records.

In Florida "public records" are now defined as

> ...all documents, papers, letters, maps, books, tapes, photographs, films, sound recordings or other material, regardless of physical form or characteristics, made or received pursuant to law or ordinance or in connection with the transaction of official business by any agency.

While the Florida statute cited above clearly states that a public record is accessible "regardless of physical form" there has not been a corresponding enlargement of the conception of the process whereby records are inspected, examined, copied, or photographed. The Committee found no basis in Chapter 119 for determining that remote access is prohibited or undesireable.

The study found that the majority of public record custodians have automated their public records systems and also provide computer terminals on-site for public use. Some government agencies provide remote electronic access to public records, and numerous private-sector organizations market government information. Of those government agencies which provide remote access about 25% have indicated experiencing problems regarding computer access to public records. Security needs of the public records custodian regarding computer access must be addressed before access can be provided. Further, it appears that remote computer access, at least initially, may only be requested by and affordable to large-scale users.

Public records custodians in Florida wishing to comply with requests for public access have found themselves in the middle of two conflicting laws: the Trade Secrets Act which protects proprietary software from disclosure and the Public Records Act which requires full disclosure. More specifically, agency-produced software is a critical and sensitive resource that is not exempted from Chapter 119. Statutory protection for this resourec is highly desireable and criteria for determiningwhich programs are to be exempted still requires development. An additional problem is that the State has no law guaranteeing the right of an individual to challenge and correct any erroneous information about the individual contained in government
files.

The Florida study recommends that remote access to public records should be authorized by statute and encouraged as a matter of policy. It further suggests that proprietary software and "sensitive" government software should be exempted from the Public Records Law. With respect to cost, the study recommends that costs of computer time involved in filling a request be chargeable to the requestor, but only after some uniform costing and charging policies are developed state-wide. The retention and protection of public records produced and stored in automated systems is of great concern and state practices in these two areas should be reviewed. Finally, the record custodian's liability for the accuracy of information provided by remote access is not yet stipulated and should be addressed as part of the developing legislation on this issue.

<u>California</u>

The report "Framework to Develop Computer Information Public Access Policy" was prepared at the direction of the Department of Finance, Office of Information Technology in fulfillment of the reporting requirement of Assembly Bill No. 2074, Chapter 1327 (1983). The study notes the widespread and effective use of computer systems in the State (annual cost of $500 million) and the proliferation of personal computers and other mechanisms that make public access to automated files possible. It cites as the two main policy implications resulting from these circumstances as "information as a public resource" and "public information and individual privacy." Given that much of the information in State databases contain elements from both categories, the policy and cost problems will be difficult and costly to sort out. The report addresses desirable access to such databases and

potential vulnerabilities associated with unauthorized access. Thus, consideration of means of allowing useful and appropriate puvlic access to public information, must address protecting the confidentiality of non-public information, preserving the operational integrity of State information systems and information mangement facilities generally, and achieving an acceptable means of amortizing the costs associated with public access.

The study recommends that implementation of any policy should occur over the course of several years rather than several months because of the complexity of the issues raised and the need to retrofit large and varied systems and/or employ developing new technology to resolving the conflicting goals of providing public access and yet safeguarding confidential information and the physical data itself. The study also recommends that terminology and definitions relating to public access and data security be clarified and made consistent. The current definitions and terms are often in conflict with one another or are not uniformly used throughout the State. Further, the study noted that the administration of public access is dispersed; each agency is required to have its own written guidelines for public access and must report to the Office of Information Practices those records which are maintained that are subject to the Information Practices Act.

The study noted that cost and pricing methods vary as do the actual costs of providing data given the variety of both older and very complex machines. The report suggests that some standardization of pricing be implemented but recognizes the difficulty of sorting out what portions of cost should rightfully be absorbed by the State and by public access fees. It does suggest, however, that the following factors be taken into account as well as direct cost:

- Cost of collecting access fees
- Frequency and volume of access
- The accessor's ability to pay
- Commercial value of the information

The study suggests that policy development be directed at five main areas which if adequately addressed will provide a reasonable basis for simultaneously providing access and preserving confidentiality of data and integrity of systems. These areas are:

- Defining and standardizing terminology
- Improving public access and data security administration
- Determining a standard decision-making process
- Developing equitable cost recovery and pricing
- Establishing efficient and economical public access system design standards

A companion report on vulnerability of systems will be completed by May 1985.

## Selected Public Access Systems in Local Governments

As noted earlier, we did not have the opportunity to conduct a comprehensive assessment of local government use of information technology to facilitate public access to agency decisionmaking. There are over 30,000 general purpose local governments and more than 50,000 related local government agencies in the United States. It is possible, therefore, that a number of governments are experimenting with simple, or even advanced, applications of information technology that we did not discover. The task of determining which governments are doing so would be costly and very time consuming. [4]

We did conduct a review of documentary sources pertaining to this subject. The results suggest that there is relatively little innovation occuring presently, although there has been considerable innovation over the past twenty years. Where appropriate, the results of those earlier efforts are incorporated in this report (see especially Section IV below) because they inform the general concerns of this study.

In this section, we concentrate on brief descriptions of a few current instances of the use of information technology that are worth noting because they illustrate prototypical uses. Most relate to various uses of one-way broadcast of video information pertaining to local government decisionmaking. Only one instance (discussed first) was tied directly to the operational activities of a local government, and in this case there was little connection between the system and decisionmaking processes. Rather, the public uses made of the system are for retrieving land record information. Generally speaking, most local government applications of information technology are targeted for expediting the functions of the government, not for providing public access to government information or

decision making. This point is brought home forcefully in studies of local government use of computing (for example, Kling and Kraemer, 1982) and of CATV (Dutton, et.al., 1984, Kraemer, et.al., 1985).

Governmental Databanks via Computer Network of the Regional Information System, Lane County, OR [5]

Through an unusual cooperative arrangement among local government agencies in Lane County, the Regional Information System (RIS) has created a continuously current, on-line databank about individual properties in the County that is accessed not only by the RIS members, but also by private individuals, citizen groups and companies. Access is provided either through public terminals available at the public service counter of an appropriate agency (e.g., community development in city, assessor in county) or through remote terminals at the user's site.

Public terminals at the service counter of a governmental agency, are most often used by government staff to answer a personal or telephone inquiry, but they also are used by individual citizens. The staff at the service counter usually assists citizens in learning how to use the terminal. The most frequent individual users are real estate brokers and individual citizens who wish to contest their property taxes before the Board of Equalization. Both the brokers and citizens are primarily searching for information about the assessed value and tax status of comparable properties in a fairly localized area. These areas tend to be along a particular street, on a particular block, or in a particular developer's housing tract. The Board of Equalization has a computer terminal in its hearing room which is used to check out citizen claims in taxation contests.

Access by remote terminals at the user's site is currently limited to title insurance companies. These companies make frequent and continuous use of the property databank to keep their own records current. Although access by remote terminals is new and provides great productivity gains for the title insurance companies (previously their staff collected the data by hand from the County offices), their access to such property information had existed previously. It is unclear whether there is any impact other than speed, ease of data collection, and cost savings from their having direct access.

RIS staff are cautious about expanding remote access beyond that provided to title insurance

companies. They are concerned, for example, about giving an individual homeowner with a personal computer similar access because their potential use of the information appears to be less clearly defined. In an organization such as a title insurance company, the intended use seems to be clearer and discipline is exercised by the company over staff use to prevent "rummaging" through the files for anything that looks "interesting". In contrast, citizen access potentially involves greater possibility for misuse and therefore embarrassment to political and administrative officials for having granted such access.

The Lane County situation is unusual. We are unaware of any other local government in the United States providing public access to governmental databanks. There might be a few other places, but we are certain there are not many.

Governmental and public affairs programming via Cable in Beverly Hills, CA [6]

The city began programming on its governmental channel in 1978 when cable penetration levels in the city reached 50 percent of the city's households (penetration is currently 56 percent, about 7600 households). Programming was limited initially to about 20 hours a month, but by January 1982, programming increased to 40 hours a month, by September 1982 to 80 hours a month, and by fall 1983 to 120 hours a month. The programming consists of Council meetings, public hearings and some special events on an intermittent basis, but the majority of the cablecasted information is limited to simple character generation (using a 24-hour datacaster which provides government notices of activities, community meetings and events, and information about upcoming government access channel programs).

The objectives of cable and its content are primarily shaped by city staff with indirect citizen input. The city's concern seems to be more with getting information to citizens than with soliciting suggestions from the them. There are no formal mechanisms, such as a citizen advisory committee, by which citizens can become part of decisionmaking about cable programming. There are few informal methods either. Citizens voice their opinions on various programs when Council members or Administration officials speak with the public in meetings or informal events, but there are no citizen response meetings on cable per se. Few public officials see the need for formalized feedback on programming arguing that the

City is small enough for the Council and Administration to feel in touch with the needs and desires of the community.

The Beverly Hills situation is common throughout cities in the United States. Indeed, the use of CATV for governmental and public affairs programming is the most common of all the uses of information technology for increasing citizen access to public agency decision making.

Governmental and Public Service Programming via Cable in the City of Irvine, CA [7]

This system was investigated because it is one of the oldest used to broadcast government and public service programming in California. The cable system is a simple, even outdated system in terms of technological advancement, and there is not much actual government or citizen use of the system. Community Cablevision Company, a subsidiary of the Irvine Company which is the developer of the City of Irvine, runs the system. The cable company was originally formed during the late 1960s to provide better television reception to all residences on the Irvine Ranch. The system has 36 channels available, a satellite downlink, and computer addressable programming. There is one public access channel and one educational channel; only the educational channel is capable of two-way interactive transmission. There is one aspect of the system which is technologically advanced, and relatively new: the two-way addressable, computer-controlled, automated service system, which allows the cable company to turn the cable on or off, or to modify the type of programming received by individual households, directly from the company's office through the cable network with the aid of a computer. This device drastically reduces service time and cost to the cable company.

In the past, the City has tried several different programs. At one time it had a call-in talk show, and it provided a few community service programs, such as an alcoholism test for home viewers, and the city broadcast several industrial development programs. Apparently the interest in and response to these programs was not especially positive, and consequently neither these programs, nor anything similar, is currently being shown. The only programming still being broadcast is the city council meetings, and this seems to be mainly a matter of routine. There are no present or future plans for any other government programming.

Government usage of cable in the City of Irvine did not meet with any of our expectations although it had seemed that there was potential for extensive government and citizen use due to the high socioeconomic status of Irvine's residents. In reality, however, the actual use of cable television by Irvine and its citizens is typical of most cities in Orange County: there is air time available on the government public access channel and great potential for use, but little is actually being done (Kraemer, et.al., 1975).

Governmental and Public Affairs Programming via Videotex in Rancho Palos Verdes, CA [8]

The city was involved in a videotex experiment with the Times Mirror Corporation which included governmental programming along with commercial programming. Videotex is a simple, mass market, two-way information delivery system which which users can interact. Information is stored in computer databases and access through normal telephone lines or coaxial cable. The pages of text or graphics are retrieved by the user using a hand-held keypad attached to a television receiver equipped with a modem converting the digital signal to an analogue signal for display on the television screen. Videotex characters and graphic shapes are composed in much the same manner as a normal television picture.

Participants in the trial were provided with video equipment consisting of a 19 inch TV with a special adapter and decoder, and a small hand-held keypad for entering commands. The transmission took place using a modem over normal telephone lines. Participants were able to select from approximately 50,000 pages of information including: new, information, banking, games, entertainment, travel, advertising, library services, community information, and teleshopping. Participants also were able to access other computer systems for entertainment, shopping, and travel services. In addition, they could make use of an electronic mail feature with other participants.

The city developed approximately 100 videotex pages as a governmental section of the trial database. Items stored in the city's database included: city history, government, background of city officials, business and economy, fire protection, home improvements, police services, earthquake preparedness, animal regulation and control, refuse collection, and new housing developments. Most of these applications were self-explanatory and phone numbers and addresses

for further information were provided. Information was updated regularly by means of a terminal installed at city hall. City hall had its own videotex terminal and the city was therefore both a user and a provider of information.

The terminal at city hall was initially a curiosity for most visitors, but usage of governmental information in the homes was low and declined over the period of the trial. Usage reports showed that the government pages were assessed about 200 times, representing 0.1 percent of all 149,530 accesses in the nonadvertising part of the database. Popular and frequent usage went to news, banking, shopping, games electronic mail, and community bulletin boards.

Governmental and Public Affairs Programming via Cable in the City of Buena Park, CA [9]

In contrast to the City of Irvine, the City of Buena Park has a new and sophisticated cable television system with interactive capability, a separately wired "institutional" network, a broadcast studio, a teleconferencing facility in council chambers, and the financial resources to make effective use of the system in providing improved government services. Though still in the early stages of using the system, Buena Park is following in the government tradition of very limited utilization of its extensive cable capabilities.

In 1980 the city awarded a 15-year franchise to Teleprompter (since changed to Group W). The franchise includes a variety of covenants designed to ensure that the cable system will provide outstanding service. Noteworthy features of the system include the provision of five entertainment channels with interactive capabilities, interactive channels for government, schools and medical institutions, an interactive system for government use only, capability for connection of traffic signals and water meters to a computer using the cable system, data transmission capability, emergency alarm and alert capability, ability for monitoring of city fuel dispensing, and a library channel.

The cable system began operation in January, 1983, and has already reached an above-average 50 percent penetration rate; the cable company projects eventual usage by 65 percent of Buena Park's homes and businesses. The technical capability exists to greatly enhance the effectiveness of government service provision.

Buena Park has utilized the cable system for broadcasting of programs such as: information on conserving water; a "meet the candidates" program prior to a recent council election; fire department training films; and community news that large items of trash would be collected on a specific day. The following activities are planned: a program on city government structure and services; centralized burglar and fire alarms at ten city installations; connection (for a fee) of commercial buildings to the alarm system; "MEDALERT" check-in for home-bound persons served by the city; and water metering through cable for some facilities.

There is a prospect for citizens to make extensive use of the public access channels: the studio facilities training sessions, offered at no charge by Group W, are fully subscribed for the next five months. The "Buena Park Foundation," funded by Group W with $100,000 in 1983 and $50,000 per year thereafter per the franchise agreement, is actively promoting public use of the free studio facilities for plays, sports and other events. The library system is involved in producing puppet shows, community theater, and similar efforts.

Interactive Communication and Political Participation via Cable in Columbus, Ohio

The most well known cable experiment in the United States is Warner-Amex's Qube in Columbus which was introduced in 1977. Although extensive promotional literature has been written about the system, very little public data or research exists on the experiment. The most widely publicizied feature of Qube was its interactivity or capability for two-way communication. It was felt that interactive cable could provide political information, facilitate political communication, and facilitate political participation.

Experiments with such uses have been conducted in Columbus via the Qube system. Qube provided subscribers with a terminal which allowed them to select programming and send signals back to the programmer when the programmer presented prompts for that feedback. Local programming was extensive at first with programs on local sports, local and national public affairs issues, health, and events such as parades. Much of the programming was interactive, with subscribers given the opportunity to react to comments made by persons on the shows and express opinions.

Subscribers could participate in game shows, talent shows, debates and quizzes (Becker, 1984).

In one experiment, subscribers participated in a discussion of a planning report for a Columbus suburb. A public hearing of the City's Planning Commission on the report was narrowcast to residents of that suburb. Subscribers at home could respond to periodic questioning from the meeting as well as indicate if they would like to ask a question. These persons were then called at home and asked to put the question to the Commission members. The experiment was considered successful in several regards. First, the viewership figures were high in comparison with other local interative programming. Second, participants indicated that the interactivity was the single, most important aspect of the narrowcast. Third, participants indicated they were impressed by the technology's ability to give both them and the Commission information on responses to the report, and nine out of ten participants indicated they answered each question posed to them (Litman, 1978; Becker, 1984).

While the Qube experiments were popular and demonstrated the technical feasibility of such use, they did not demonstrate political or economic feasibility and have not become operational features of the system. According to Laudon (1984) and Becker (1984), they were used primarily to market franchises to other cities and, at present, "little use is being made in Columbus of the interactive capability allowing respondents to overtly send messages to the system headend" (Becker, 1984:19).

## IV. EVALUATION OF THE FINDINGS

These foregoing findings, while somewhat limited, do not tell the whole story about use of information technology to provide public access to government decisionmaking. We conducted a review of research to help place these findings in context, and to provide insight that will apply in the interpretation of these findings as related to federal government application prospects.

### Factors Influencing Development of Systems

There are several factors which appear to be major determinants of the extent of development and use of systems

which facilitate public access to agency decisionmaking. Although these factors were derived primarily from our state survey, they were corraborated by our local government survey as well. And although these factors relate primarily to the provision of information related to agency decisionmaking, they seem applicable to communication and participation as well.

We identified seven factors as major determinants: (1) state law, (2) vulnerability of systems, (3) threats to confidentiality, (4) cost of providing access, (5) the status of software, (6) technology, and (7) lack of citizen awareness and interest. Each of these determinants is discussed next.

State law

The most obvious and substantial differences among states in this area is whether or not they have enacted "sunshine legislation." This legislation, such as Florida's Records Act of 1909, provides public access to any public document regardless of physical form, unless statutorily exempted. In states other than Oregon and Florida where such legislation has been passed, however, the confidentiality of data is held supreme over the rights of public access. Another important legal condition is whether or not the particular state has a law which provides for equal evidenciary value of electronic communications media. There has been more development of public access systems in states which have such laws.

Vulnerability of systems

A second major concern of all states contacted is the vulnerability of systems which increases in direct proportion to the degree of access. It is difficult to give meaningful access to systems without exposing those systems to the risk of tampering or damage. In order to solve the vulnerability problem, Florida is considering construction of a separate state-owned data center. The data center would operate a communications system to be accessible via electronic media to which all publicly accessible information would be downloaded from the State's operating systems on a routine basis. While the planned center would be an ideal approach to public access, the expected cost of this center is delaying its implementation.

Threats to confidentiality

In non-sunshine states, threats to confidentiality brought on by public access join vulnerability of systems as important constraints on the development and

implementation of systems which provide for public access. In most records it is not possible to identify certain parts of the record as accessible and others as not accessible. Therefore, given that most files contain a mixture of confidential and non-confidential data, the level of meaningful access to public records is quite limited.

Cost of providing access

The cost of providing access and how costs are recovered is another important aspect of the public access question. In most states inspection of a file is free while the reasonable cost of providing the data either on paper or on electronic media is normally recoverable. In Florida there was a pricing scheme used whereby corporate users would pay a higher price than the general public and often had terminals and modems linked to the public system. For this they would pay a subscription fee monthly. This fee was challenged and its legality is now being reviewed by the judiciary. Florida has gone so far as to discuss the question of whether receiving and viewing a record by electronic media is "inspection" or "provision" of the record.

The status of software

As the issue of public access develops, the status of software which often drives governmental decisions cannot be overlooked. There have been several court cases where the source code for software has been deemed part of the "public document" and therefore has been sought by private parties. Computer manufacturers and software vendors are extremely concerned about these developments because they might be forced to provide the source code for proprietary software when the software is part of the public document.

For example, in the case of Federated Department Stores vs. Rebecca Wallace et.al. (appraisers), Federated is suing the City of Palm Beach, Florida to gain access to the software used to prepare property tax assessments. Florida state officials are highly interested in the outcome of this suit because Palm Beach uses the same software used by the state for its property tax assessments. If Federated wins, this will open up a whole new arena of access and may jeopardize the proprietary rights of software firms to protect their programs. Moreover, there are serious questions related to possible liabilities in this case. Suppose, for example, that the programs used to calculate tax assessments became widely distributed among the population. Anyone with a personal computer could then

begin conducting their own analyses and contesting government decisions using the results of these analyses. In theory this might be acceptable, but in fact it opens new issues which are problematic. Errors in the systems being used by the public (including errors that result from the fact that the government changes the algorithms it is using) could result in a tidal wave of complaints and administrative problems for the agencies. It is also useful to note that some individuals might take advantage of the knowledge gained from such programs to figure out how to evade taxes.

In one of the states surveyed we found another dispute between a private entity and the state government concerning access to a computer generated file. In this case however, there was no interest in the software per se, but there was interest in the floppy disks on which the daily record of legislative proceedings is kept. The state's public access law is fairly liberal, allowing access to files in paper or computer tape medium. The law does not specifically indicate floppy disks, however, and the state has decided to retain these and not provide copies. A private firm which would benefit from these floppies by not having to reinput the data contained on them, is suing for the right to receive these files on floppy disk formal. Interestingly, the House and the Senate in this state appear to be divided on the issue of whether or not to release copies of the disks. Hence, it appears from these two cases that the medium on which state data resides and the software that drives the analyses are as important as the data itself when considering public access questions.

An interesting conflict is developing in one state which was surveyed which may have substantial implications for more widespread development of public access systems by states and even by the federal government. The situation involves a state which is developing a system to provide tracking of bills moving through the legislature. A private firm has already established such a system in the state which is well regarded as being both accurate and timely. The dispute centers on the state's construction of this measure tracking system in light of a statute which prohibits the state from developing products or services which would be directly competitive with those of private firms already providing that product or service. A suit lodged by this firm to block further development of this system by the state is quite likely. The outcome of this dispute will certainly have substantial implications for the location and timing of future developments in this area nationwide.

Technology

Another set of factors which affect the extent of public access are technological. Most states have a variety of computers and systems built around various functions, many of which do not talk to one another let alone a diverse public. Even when access has been achieved, the design of databases and records is most likely not in a form which is compatible with the needs of the enquiring public. To be truly effective in accessing public information for decisionmaking electronically, therefore, one needs the proper equipment and staff trained to obtain and format the data in a way which the user finds helpful. In Minnesota, for example, the Catholic Youth Services Program has on-line access to a subset of the data held in the welfare system. Insurance companies have on-line access to driver's license records, and certain law firms in the state have limited access to the Law Enforcement Network. In all three of these cases the access is for a specific purpose and the frequency of use and importance to the accessing organization is sufficiently high that the overhead cost of arranging for proper equipment, trained personnel and program routines which convert the public data into useful forms have been provided for.

Lack of citizen awareness and interest

Beyond the legal and technical impediments discussed above, there is a substantial gap between the capabilities of modern technology to indeed provide public access and the awareness, ability and interest on the part of the general public to use such systems to their advantage. Computer literacy is an essential element in effective use of public access systems as is a more thorough understanding of governmental processes. While both forms of literacy appear to be improving given increased emphasis in the educational system and the steadily increasing amount of computer use in the home, we should not be surprised at the relatively low usage of those public access systems that do exist.

Uses of Information Technology in State and Local Government

There have been about eight major uses of information technology experimented with since the early sixties that variously were intended to or might have implications for increasing public access to agency decisionmaking. These have included:

Databanks for public access

Computer models for public use and replication

Electronic voting for instant referenda

Cable television broadcast of government legislative meetings and administrative hearings

The public access channel and citizen participation

Teleconferencing for administrative hearings

Teletex and videotext for public information

Most of the experiments with the technology's use have occurred in city or county governments rather than states governments, although some uses later migrated to state agencies. Each use is briefly described and assessed below.

Databanks for public access

The earliest uses of information technology for increasing public access to government decisionmaking focused on government databanks and community information utilities (Hearle and Mason, 1963; Sackman and Nie, 1970; Sackman and Boehm, 1972). The idea behind government databanks was that computers would provide the means of automating the operations of government and, in the process, produce vast stores of data about the government and the community that would be of interest to citizens as well as to the government. The notion of community information utilities went considerably further in suggesting that information was a resource similar to power and water and should be provided, along with the necessary computer power, on a community-wide basis in the same way as other utilities are provided.

In the case of both databanks and information utilities, the promoters and government officials that experimented with them expected that the information in the databank/utility would be accessed remotely by individual citizens and corporate users thereby increasing public access to agency information. Government databanks were experimented with in a large number of communities in the sixties and early

seventies (e.g., Tulsa, Portland, Alexandria). Information utilities were never built in any community--not even on an experimental basis.

While most of the early databanks ended in failure (Kraemer, 1969; Kraemer and King, 1978), they have been replaced today in many governments by databases which are by-products of automated operations such as property records, tax appraisal, tax assessment, and tax billing. These government databases are rarely extended outside government for use by citizen or corporate users (King and Kraemer, 1982) although use of public terminals for access to these databases within government agencies is common, and becoming more so. However, we are aware of only one instance of public access to government databases via remote terminals in the user's situs. That instance focuses on use of property records by title insurance companies and is described in our case study of Lane County, Oregon in Section III.

Computer models and data for public use and replication

Over the last decade, there has been discussion in the literature about advocacy planning and modeling by citizen groups (Greenberger, Crenson and Crissey, 1976; Kling, 1978). The notion is that individual citizens, interest groups or corporations might have access to the models and data used by government agencies in making decisions about land use, property value, transfer payments, public safety, and economic policy. The practice is referred to as "counter-modeling" and "advocacy modeling" to signify that some individual or group is developing analyses to counter public agency decisionmaking or to advocate different decision alternatives than those being considered.

The practice currently is limited to the hiring of consultants or in-house experts to develop independent models and analyses (see for example, Chapters 2 and 5 in Dutton and Kraemer, 1985 forthcoming) rather than getting the agency's model and data and rerunning the analyses using different assumptions and data or rerunning the analyses using different models with the same assumptions and data. We are unaware of a single instance where the same models, assumptions and data were used by both agency and their opponents in a decisionmaking situation. However, this might become more common in the future. In Section III, we discuss the case of Federated Department Stores vs. Rebecca Wallace et.al. (appraisers), where Federated is suing the City of Palm Beach, Florida to get access to the software used to prepare property tax assessments.

This case could have broad ramifications for the future of public access to agency decisionmaking.

Electronic voting for instant referenda

Spurred by the recent success of citizen initiatives and referenda, interest has picked up once again in recent years in the notion of "electronic democracy" or "teledemocracy" through two-way cable television systems. Advocates argue that these systems can be used for "flash polling" of citizen opinions or, after extensive effort to organize and involve citizens, to obtain informed opinion from a representative sample on complicated issues. Advocates also argue that these systems might give an effective voice to groups that were previously unheard (Litman, 1978; Pergler, 1980; Becker, 1981; Lehman-Wilzig, 1983).

Laudon characterized the hopes for these systems as follows:

> The hope was that acting in a broadcast mode cable television would be able to deliver more political information and political news to American homes, would permit politicians more opportunities to explain their positions in programs to the public. And, operating in an interactive mode, it was hoped that cable would permit citizens to register their views and to influence the political process by organizing amongst like minded people political caucusses to influence the political process. I shared this hope for the political impact of cable television in an ideal world (Laudon, 1984:14).

Despite the initial popularity of interactive cable, few cable systems are two-way today because the technology for two-way interactive cable is not yet available at reasonable costs (Russell, 1984:32; Smith, 1981; Stroller, 1982). Moss and Warren (1984) indicate that only about 10% of the cable systems in the country have allocated channels to governmental, educational, and public access uses. They indicate that the record is somewhat better in the 50 largest systems where approximately one-third have channels dedicated to public programming. The limited diffusion of cable is significant because without widespread diffusion, the functionality of the system would be limited and some people would be disenfranchised (Moss and Warren, 1984). In particular, people in low-density outlying communities and in subareas of large cities would be affected (Dawson, 1982; Stroller, 1982; Rothbart and Stroller, 1983; Haight et.al., 1982).

The limited spread of two-way cable is also due to the fact that the interactivity feature has had no discernable affect on increasing the number of cable subscribers. For example, Laudon notes that only about 2% of Qube's 350,000 subscribers watched the most popular of the interactive offerings, the game shows (Laudon, 1984:13). Moreover, Pepper (1984) argues that most specialized channels are seldom, if ever, viewed. The most successful cable networks are those appealing to a broad audience with programming such as sports, movies, or news. Thus, as summarized by Laudon (1984:12) "the promise of interactive cable television has largely been dashed because of broad disinterest on the part of the public".

There are at least four major concerns raised by the use of the two-way systems. The first is that they represent another form of disintermediation in American politics and government. As explained by Gerald Benjamin (1982:4), disintermediation refers to the by-passing of political parties and government institutions by political candidates or government officials:

> For years, political parties have been weakened by the growth in the importance of primaries and by the decline in citizen identification with parties. By means of television, polling, and computer-based mail, candidates can enter into a direct relationship with citizens, bypassing the mediating institution of the party. ... Two-way cable television promises to continue this process of disintermediation, with effects not only on parties but also on representative institutions.

The second concern is that flash polling could lead public officials to take unwise actions, especially in times of crisis and emergency, which is when such polling could most likely occur and have disastrous consequences.

The third concern, which obtains in both "flash" and more carefully organized polling, is for safeguards to avoid the unbalanced presentation of information or the administration of biased questions. The success of one-way television combined with large-scale community organization and polling in political campaigns illustrates both the power and the subtle potential for abuse in presentation of information to different constituencies (Benjamin, 1982).

Finally, there is concern over a seldom discussed aspect of interactivity--the potential for invasion of privacy. The central computers which actively poll

terminals in the home also can also "passively" poll all terminals to learn whether the television set is turned on, what programs are being watched, and what responses the audience members are providing to special prompts of the programmer (Becker, 1984).

Cable television broadcast of government legislative meetings and administrative hearings

Cablecasting of legislative meetings and administrative hearings, or the local equivalent of C-SPAN, is another use of information technology for indirectly enhancing public access to governmental decisionmaking by increasing levels of public awareness, interest, and knowledge about government affairs. Every local government that has a cable franchise probably has the technical capability for such cablecasting. Some governments have extensive, sophisticated capabilities for cablecasting, including production studios, specially-designed council chambers, mobile cablecasting vans, and two-way communications (for example, the Brea case discussed earlier).

Utilization of these channels by local government is generally low. Most cities have only about two applications of cable for government affairs programming (Dutton et.al., 1984; Kraemer et.al., 1985). These have mainly been limited to a variety of one-way services that require minimal production effort, such as broadcasting city council meetings, public hearings, community events, and use of character generators for community bulletin boards, calendars and short local news items. As suggested above, cablecasting is done primarily by city councils although some county and state legislatures do also.

Although any type of legislative, administrative or public meeting could be cablecast, the most frequently cablecast meetings are city council meetings. Cablecasting of city council meetings is the second (after databanks) most common use of information technology for increasing public access to government decisionmaking. Cablecasting of council meetings is nearly always one-way, and about equally divided between "live" and "off-line" (or broadcast some time after the meeting actually occurs rather than live). Columbus, Ohio tried two-way meetings for a time during the Qube experiments but could not continue them as a practical matter since only part of the city was served by the two-way cable capabilities.

Generally, the number of citizens watching such services are too negligible to support a positive

interpretation of their value to enhancing public access (Becker, 1984). An exploratory study in Irvine, CA revealed that the most frequent viewers tended to be city employees and members of city boards and commissions who otherwise might have attended the meetings in person (Public Policy Research Organization, 1976). Ordinary citizens view the meetings as a curiosity. Some critics suggest that one-way services undermine rather than enhance public access to government decisionmaking by portraying a favorably manufactured top-down image of politicians and political institutions. One typology of citizen participation mechanisms labels these one-way services as tokenism, rather than meaningful participation.

In general, then, even though favorable franchises with broad technical capabilities have often been negotiated by city governments, little use has been made of cable systems for increasing public access to agency decisionmaking. This conclusion is supported by recent surveys and case studies in Los Angeles and Orange Counties California (Dutton et.al., 1984; Kraemer et.al., 1985) and other literature on cable elsewhere in the Nation (Becker, 1984; Laudon, 1984; Moss, 1984; Warren and Moss, 1984).

The utilization of cable by local government appears to have been constrained by the socioeconomic and political character of those cities that have access to public communication services. In the Los Angeles study, Dutton and his colleagues found that while the more affluent cities were more likely to have cable systems, the wealth of a city was not a factor in whether or not governmental applications of cable were made. Conversely, in Orange County, Kraemer and his colleagues found that the relatively more affluent cities were more likely to make use of their facilities.

In most cases it is not the socioeconomic character, but the political character of cities that have constrained greater utilization of cable. The beliefs and attitudes of public officials have held back any real progress in developing cable capabilities for public access. These attitudes include lack of imagination as to the uses of cable for governmental programming, fear that cablecasting of decision-making processes might affect those processes, the belief that government should not interfere in what is perceived as basically private-sector business, and lack of a perceived need for (by citizens) or advantage (for counsel members) to extensive cable utilization.

## The public access channel and citizen participation

At one time the Federal Communications Commission (FCC) required major cable systems to include a provision for public access channels that would give the average citizen free access time on a first-come basis. The idea was that citizen participation and involvement in government decision making would be enhanced through a more active media role. Although the FCC requirement was invalidated by the courts, many cities have included such provision in their cable franchises. For example, over 85 percent of the cities in Los Angeles and Orange Counties, California have such public access channels.

Though the majority of cable franchises offer free community or public access channels for which equipment, studio space and free transmission rights are generally provided, these have not been utilized by communities to any great extent, with only scattered exceptions (e.g., Reading, PA, Columbus at least initially, and Reston, VA).

The provision of interactive versus one-way capabilities reportedly adds little comparative advantage overall. The NSF experiments with interactive cable, for example, produced strikingly little evidence of the superiority of interactive cable in comparison with other technologies for the communication of information (Brownstein, 1977, 1978; Berryman, Bikson and Bazemore, 1978; Lucas, Heald and Bazemore, 1979; Baldwin, et.al., 1978; Becker, 1984). In Reading, for example, there was little evidence that exposure to cable programs affected actual use of services provided for the elderly or attitudes towards those services. Evidence that the cable programs produced increased knowledge of the services was also very weak (Moss, 1978).

Moreover, the results of public access channels have been dismal. According to Eric Barnouw (1982:19):

> Use of these channels has at time been exhibitionistic, drab, and trivial. Catering to diverse interests, the channels have seldom won a steady audience, and their significance is thereby diminished. The result is a sort of electronic Hyde Park corner, a place to express views on any subject to little effect.

### Teleconferencing for administrative hearings

The use of teleconferencing for administrative hearings does occur in state and local governments and reportedly is successful. Most such uses, where they occur, are aimed at bringing together individual citizens, or the several parties in a dispute, and administrative/judicial officials to discuss specific cases or issues. Such uses do not include the general public. Generally, most members of the public involved in administrative hearings attend the actual hearings as participants because the hearing involves them. Members of the public interested in administrative hearings simply as witnesses to the hearings could be included via one-way video or audio links, but this would not be teleconferencing.

### Teletex and videotext for public information and communication

There is considerable potential to provide public access to information related to government decisionmaking via teletext and videotext. This kind of information provision is currently restricted to notifications about schedules for hearings, meetings, and so on, or to posting the results of such activities. There is also the possibility for the public to interact with government agencies through two-way links that would allow them to register their sentiments on given issues, to sign-up to attend meetings, or to let government officials know whether a scheduled meeting time or place is convenient for the intended audience.

## Extent of Use of Systems

Expectations of extensive public access to agency decisionmaking through innovative use of information technology have failed to be realized in practice. The most commonly used information technology for increasing public access among state and local governments is the computer databank. In fact, its use is ubiquitous and ironic. Public access to computer databanks held by government agencies tends to take the form of granting access to "corporate publics" (e.g., sharing DMV data with insurance companies, property data with title insurance companies and real estate brokers) rather than to individual citizens. This pattern of failed expectations follows for all of the technologies examined in this study.

Most uses of the new information technologies has been largely limited to experimentation. The experiments were neither highly successful nor widely adopted elsewhere with the exception of computer databanks and cablecasts of council meetings. These experiments with new technologies usually demonstrated the technical feasibility of new uses of information technology, but also demonstrated the considerable economic, social, psychological and political barriers to broader use.

Impacts of Use Recorded in the Literature

We can summarize the impacts of use of such systems as recorded by researchers as follows.

1. Public officials have developed deep reservations about the utility of the new uses and of the direct democracy provided by such uses as the instant referenda.

2. Scholars have raised serious questions about the potential social effects of more extensive use of these new technologies. For example, Theodore Lowi (1972, 1981) argues that broader access to the technology alone will increase the number of ad hoc interest groups and political factions and intensify the tendency toward direct political action through social movements and special interest groups. Becker (1984) points out the passive monitoring capabilities of interactive cable.

3. Empirical researchers have documented unanticipated consequences from use of the technology for increasing public access to agency decisionmaking.

4. The failure of promoter and reformer visions of extensive public access to agency decision making through use of information technology does not negate the potential of new technologies to play a positive, though limited, role in enhancing public information, communication and participation in the governmental process.

## The Findings in the Context of Our Conceptual Framework

Our findings from the survey and literature reviews reveal that the conceptual framework presented earlier provides, at best, a glimpse of what might be. In no case studied are all the technological possibilities exploited.

Generally, we find that electronic information technologies are applied variously to the different kinds of information provision related to public decisionmaking. In decreasing order of frequency, the applications are as follows:

1. Meeting Records: A number of states and local governments are now broadcasting major meetings and hearings via audio or video communications media. In the vast majority of cases, these are one-way broadcasts. Some are done in real-time; some are delayed broadcasts. Some of the delayed broadcasts are edited. In no cases do state or local agencies provide comprehensive coverage of all decisionmaking meetings or hearings. The impacts of these broadcasts have not been assessed. In some cases, it seems as though public interest in the broadcasts is marginal at first, and declines to insignificant levels over time.

2. Records of Decisions: There are also a significant number of instances where governments, especially local governments, are broadcasting summarized results of decisionmaking meetings and hearings over cable television and videotex media. Again, these instances are not common and the impacts of such broadcasts has not been ascertained.

3. Protocols and Procedures: Electronic information technology is being applied in a few instances to provide the public with access to schedules of meetings and hearings at which decisions will be made. Many local governments with the capability to broadcast videotex announcements provide interested viewers with such schedules. There appear to be no such systems in operation at the state level, and certainly there are none among the states surveyed. Of the states surveyed, only Virginia tracks bills and other legislative activity through the decisionmaking process using computers, and then makes this

information available to the public. In neither the cable broadcasts or the Virginia experience are there any definitive assessments of impact.

4. Facts and Analyses: In none of the cases studied are electronic information technologies used to provide the public with access to the facts and analytical tools used to provide support for agency decisions. This is, however, a highly sensitive area. The litigation over access by the Federated Department Stores to tax calculation software in Florida illustrates the problems inherent in such access.

The publics served by these few applications also vary. Broadcasts of meetings over cable television or other media are generally available to the public, and conceivably cover all classes of public users. The other applications appear to be available to anyone who wants to use them, but as a practical matter, only those with specific interests in given pieces of legislation are likely to make use of them. The most likely users in such cases would be members of organized interest groups and representatives of private companies with some stake in possible outcomes of given decisions. Such parties usually have on-site presence in the seats of government, and are already tied closely to the decisionmaking process through existing mechanisms for access to information.

Overall, then, we find that electronic information technologies have not thus far affected public access to government decisionmaking to any great extent. This is true for three reasons. First, there are few instances where one can find meaningful application of the technologies for these purposes. Thus, there are few impacts. Second, it seems from previous research that most members of the public do not particularly care about public decisionmaking except when they have some specific concern directly affecting their welfare. Finally, those who have abiding concerns in the processes and outcomes of government decisionmaking generally avail themselves of the existing mechanisms for access to information. The special electronic information systems being proposed or implemented might facilitate their acquisition of information, but in few cases does it appear that these individuals or interest groups suffer from lack of advanced electronic information systems.

Implications for the Federal Government

There are several lessons from our assessment relevant to the Federal Government.

First, the empirical basis for making decisions about the potential role of information technology in facilitating public access to agency decisionmaking is primitive. While we believe that our assessment of the potential would be verified by a comprehensive assessment, such large-scale, empirical assessment needs to be done both to provide a sound basis for public policy and to counter the massive amount of misleading promotion and rhetoric in the popular literature and even in some of the professional literature.

Second, the phrases "information technology" and "facilitating public access to agency decisionmaking" warrant a narrowing of focus for policy decision and action. Our study examined a broad array of information technologies and applications because it was aimed at identifying uses of information technology that might possibly have relevance. As a practical matter, the technology of most relevance with regard to public access is computer technology.

Our study also has used the phrase "facilitating public access" in its broadest meaning to encompass provision of information, facilitating communication, and facilitating participation. As a practical matter the aspect of public access most relevant to current state and local policy concerns, and most likely relevant to federal concerns for the remainder of this decade, is public access to information. Indeed, it seems clear that the practical focus of federal policy concern might reasonably center around facilitating public access to computerized public information.

This is not to say that other media and modes of facilitating public access are unimportant. Rather, it seeks to clearly identify the area of greatest current and near future activity and concern with regard to the intersection of information technology and facilitating public access.

Third, there is a serious discrepancy between conventional images of facilitating public access to agency decisionmaking and its actual meaning as we have come to see it in application in state and local governments. For the purposes of clarification, we caricature the two images somewhat as follows. Conventional images in the literature and even in public policy debates center around facilitating individual and group access to decisionmaking through the

use of information technology for facilitating communication and participation, and to a lessor extent facilitating access to information. The spirit of these images is that of greater democratic representation as illustrated by the use of phrases like teledemocracy, televoting, and electronic democracy.

In contrast to these utopian images, the sober reality of current efforts to facilitate so-called public access to agency decisionmaking centers primarily around facilitating corporate access to governmental databases which the corporations in turn can remarket to the public and other corporations, or around facilitating corporate access to governmental decision models which the corporations can use to challenge or game public decision processes in their own or others' interests.

Thus, a simple but useful way of characterizing the distinction between utopian and realistic images of facilitating public access is between individual vs. corporate access and between civic vs. pecuniary interests in access. This is not to say that individual and civic benefits do not derive from corporate and pecuniary intersts; rather, it is to say that the latter appear to be the driving forces behind current activity (both legislation and litigation) aimed at facilitating public access and, in some cases, the driving forces behind why information technology is not used more widely by public agencies to facilitate public access. The former takes the form of increasing government assistance in providing access to governmental databases for corporations in the business of remarketing public information. The latter takes the form of keeping government out of a going into a business (e.g., the Florida data center) that business might be able to operate profitably.

The implications of this foregoing distinction for the federal government are straightforward. Public policy discussion and debate will be better informed if clarity is maintained about the true character of the public access that is to be facilitated by innovative use (or nonuse) of information technology.

Fourth, as with state and local governments, public interest in federal government decisionmaking varies greatly depending on which publics one is discussing. The individual citizen is more likely to get everything he or she needs to know about decision processes and outcomes from newspapers, radio, and television. The few instances where active, two-way interaction in decision processes using electronic media have been attempted suggest that participation is erratic and the impacts unclear. Moreover, in some instances there is

considerable debate about the desirability of such public access. The "flash polling" concept, for example, raises serious questions about the form and function of representative government. It is not at all clear that on-line national referenda on issues would record much beyond the instantaneous moods of citizens about some particular issue, and in many cases it would be doubtful whether many respondents had given the issue much serious thought. The question of how results of such participation would be used is as important as the question of how such participation could be accomplished, and there are no good answers to either question available at this time.

Fifth, there are specific instances where access through electronic information technologies could facilitate public participation in the processes of government decisionmaking, but most are in the areas of access to the protocols and processes of decisionmaking. Basically, the functions now served by published agendas and schedules or call-in information centers could be put on-line and made available to the public through terminals or other interactive media. Again, there is a question of how many people such a service would assist, and it is likely that most interested parties already have developed the contacts necessary to find out what they need to know. The question of who really benefits from such systems given their high costs is important here. Facilitating access to information about decisionmaking protocols and processes is probably a worthwhile goal, but to what extent should taxpayers support expensive systems that benefit a relative few who already have the access they need? Moreover, there is an unanswered question about the utility of knowing what is happening without the ability to affect what is happening. Most members of the public with a serious stake in the outcomes of specific decisions prefer to be on-site during the critical periods in the decision process. Face-to-face contact with decisionmakers and their staff people is generally regarded as essential to affecting the outcomes of decisions. Providing remote access to the protocols and processes of decisionmaking might help people know what is happening, but this information will only be useful in the final analysis if that knowledge leads to action that affects the outcomes of decisions.

Sixth, the most serious issues in public access to government decisionmaking relate to the processes by which facts and analyses are assembled: in other words, to the creation of the bases for decisions. Here there are truly interesting possibilities for the application of electronic information technology.

Individuals with access to the data bases and models used to formulate positions on various sides of issues clearly have the advantage over those who do not have such access. The rapid growth in use of computer-based modeling systems in the federal government attests to this, and counter-modeling is common in both executive and legislative agencies. This is also the area in which serious questions about the prerogatives of government and the prerogatives of citizens arise. As the case of the tax calculation system in Florida illustrates, public access to such systems raises entirely new concerns about confidentiality, liability, and intellectual property. In time, it is likely that public access to facts and analyses will be enhanced through use of electronic information technology. But exactly how this will happen, and with what effects, is impossible to predict at this time.

Finally, it is important to distinguish between the potential utility of public access to government decisionmaking and public access to government information. Governments are great repositories of information that is useful to the public, and indeed, many elaborate systems for providing such information are now in place at all levels. Some of this information pertains to specific decisions, but the vast majority of it does not pertain to matters of public policy or important trend-setting decisions. Most government-held information relates to public recording of factual data: vital statistics, property records, health and welfare case data, inspections information, and so on. Such information can become important to government decisionmaking, since new decisions are often based on past occurrences. And certainly, summary statistics gleaned from such data provide important input to decisionmaking. But specific data items are of episodic interest to administrative and legislative bodies, and seldom enter into public debate. The doubts we express about major efforts to provide public access to government decisionmaking through electronic information technology should not cast doubt on the potential benefits of facilitating access to other kinds of information held by governments.

## FOOTNOTES

[1] This report is the first section of a two-part report. The second part deals with information technology and public access to government decisionmaking from the viewpoint of information resource management (IRM).

[2] This report has benefited from the helpful comments and criticisms of anonymous reviewers provided by OTA. See attachments to letter from Fred B. Wood, Project Director, Office of Technology Assessment to Dr. John King, Irvine Research Corporation, February 12, 1985.

[3] There is a related aspect in which public access to agency decisionmaking is being significantly affected, but is only mentioned here because it is beyond the scope of this report. This aspect involves the increasing trend towards privatization of public databases. This tendency, combined with increasing pressures for governmental cost reduction, reduces the ability of public agencies to provide information services to the public and drives up the overall cost of information provision.

[4] In the last twenty years, local government innovation with information technology, and with technology generally, has tended to occur primarily as a result of federal or state government demonstration programs which provided them with the financial resources required. These demonstrations have usually been well publicized and most have been evaluated at least subjectively. Some local governments have conducted demonstrations in concert with private industry and these too have been publicized and evaluated. These public and private demonstrations have been reviewed in this study.

Because of technology costs, few local governments have innovated on their own; when they have, the demonstrations have tended to be small scale, increments to on-going activities. Consequently, a comprehensive survey would be unlikely to uncover useful results--other than documenting this professional judgment.

[5] The Lane County case report was based upon interviews by Kenneth L. Kraemer with the following Lane County officials: William Bain, Director of Assessment and Taxation; William Hoyt, Director, Regional Information System; Robert Swank, Associate Director, Lane Council of Governments; Paul Weber, Weber and Weber, Inc.

The report also was based upon the following documents: Robert J. Swank, Associate Director, Lane County Council of Governments, Geographic data system in Lane County, ten years of development, 1984; Kenneth L. Kraemer, John Leslie

King, Debra Dunkle, Joseph P. Lane, and Joey George, Lane County case narrative, Irvine, CA: Public Policy Research Organization, 1985.

[6] The Beverly Hills case report was based upon the following documents: Dutton, et.al., 1984; Cities using cable, Cablescan, 2(1):4-5.

[7] The Irvine case report was based upon Kraemer, et.al., 1985; Betts, W "Television gives new twist to getting homework help, The Irvine World News, April 21, 1983, p. 10. Interviews were conducted with William Woolett, City Manager of the City of Irvine, Leslie Keane, Liaison between the City of Irvine and Community Cable Vision, Wayne Hauser, Director of Community Cable Vision, and Craig Ritter, Video Coordinator for the Irvine Unified School District.

[8] The Rancho Palos Verdes case report was based upon the following document: Dutton, et.al., 1984.

[9] The Buena Park case report was based upon the following documents: Kraemer, et.al., 1984; Libraries and cable TV, Cablescan, 3(4):4-5; Ordinance No. 1113, effective October 8, 1981, "...granting an exclusive franchise to Teleprompter of Buena Park..." City of Buena Park, California, USA (September 8, 1981). Interviews were with Larry Cheeves, Assistant to the City Manager.

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# APPENDIX A

## CONTACTS AND SOURCE DOCUMENTS FOR STATE SURYEY

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